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ART. 8. NOTES ON SOME BIRDS OF THE ADIRONDACK
AND CATSKILL MOUNTAINS, NEW YORK

By
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INTRODUCTION

The Adirondack Mountains of northeastern New York and the Catskill Mountains of southeastern New York are of particular interest to students of the North American avifauna. They represent "islands" of a flora and fauna typical of the north woods of Canada, many species finding their southward limit of distribution here. A number of notable ornithologists have studied these areas, but little has been published in recent years. E. H. Eaton's monumental "Birds of New York" gives an excellent account of the ornithology of the state as far as it had been studied up to 1914, and Eaton himself devoted much attention to the Adirondack area. Since 1914, various short papers and notes have appeared, chiefly to announce new breeding records or changes of distribution.

I spent the periods June 12—July 10, 1950, and June 5—July 3, 1953, in the New York mountains. The 1950 trip was made while I was curator of the Louis Agassiz Fuertes Memorial Collection of Birds at Cornell University, and was part of a taxonomic survey of the avifauna of New York. Specimens collected in 1950 are housed in the Cornell collection. The 1953 trip was made under the auspices of Carnegie Museum,* where the 1953 specimens have been deposited.

The present paper is by no means an exhaustive survey of the bird life of the Adirondacks and Catskills, nor is it a complete list of the birds I encountered. Only those species are included for which data were obtained which were thought worthy of presentation in this form. The paper includes a miscellany of notes on distribution, reproduction, molts and plumages, voice, food habits, soft-part colors, parasites and taxonomy.

Many people have contributed in one way or another to the success of the two trips upon which this report is based. Chief among these is Dr. William L. Webb of the New York State College of Forestry at Syracuse University, through whose good offices I was permitted to use the excellent living and laboratory facilities at the Archer and Anna Huntington Wildlife Forest Station, Newcomb, N. Y. Dr. and Mrs. Webb were most helpful and hospitable at all times during my residence at the Huntington Forest, both in 1950 and 1953. Others to whom I am indebted for advice, assistance and information include Harry Ackert, Arthur A. Allen, Greenleaf Chase, Robert W. Dickerman, William C. Dilger, Richard B. Fischer, Winfred N. Ford, Jr., Gordon M. Meade, Charles Schroeder, Robert C. Van Etten and O. William Whiten. The forestry students working at the Huntington Forest were interested and helpful companions. Parasites were identified by Dr. B. V. Travis of Cornell University, Dr. J. C. Bequaert

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of Harvard College, and Dr. G. P. Holland of the Department of Agriculture of the Dominion of Canada.

PRINCIPAL LOCALITIES MENTIONED

A list of the principal collecting localities follows. Other localities mentioned in the text will be identified by reference to villages or landmarks shown on any standard road map.

Ackerman Pond. An old name for Arbutus Lake, so shown on United States Geological Survey topographic map, Newcomb quadrangle. In Huntington Forest.

Adjidaumo. This is the triangular marsh area shown in the upper left-hand corner of the U.S.G.S. topographic map, Newcomb quadrangle. In 1950 it was mostly marsh, but in 1953 mostly open water. Differences in water level here are due chiefly to damming activities of beaver. Located in Huntington Forest.

Arbutus Lake. A small lake within the Huntington Forest.

Bear Spring Mountain. A ridge lying between the villages of Walton and Downsville, Delaware County, the westernmost extension of the Catskills.

Big Shallow Pond. One of the "Five Ponds," just south of the line between St. Lawrence County and Herkimer County, about seven miles south of the village of Wanakena. It is shown on the U.S.G.S. topographic map, Cranberry Lake quadrangle. The area just east of Big Shallow Pond, shown as a marsh on the topographic map, is a tamarack bog.

Catlin Lake. The largest lake in the Huntington Forest, shown in the lower right-hand corner of the U.S.G.S. topographic map, Long Lake quadrangle.

Chubb River Swamp. A wooded swamp along the Chubb River, shown in the upper right-hand corner of the U.S.G.S. topographic map, Santanoni quadrangle. It lies about two and one-half miles southwest of the village of Lake Placid. For a description of the area, see Pettingill (1951: 376-377). This area, as well as much of the rest of the Adirondack region, was badly hit by the great storm of November, 1950. As a consequence the path mentioned by Pettingill is blocked in many places by fallen trees, and progress through many parts of the forest is exceedingly difficult.

Goodnow Mountain. This is misspelled "Goodenow" on many maps, but is correct on U.S.G.S. topographic map, Newcomb quadrangle. Just south of Rich Lake and within the Huntington Forest.

Huntington Forest. "The Anna and Archer Huntington Wildlife Forest Station, held in trust by Syracuse University for the New York State College of Forestry, is a rectangular 15,000-acre tract . . . in the central part of the Adirondacks west of the village of Newcomb, New York. . . . The area included within the . . . Station is approximately seven miles long in greatest length and three miles wide, lying in a northwest-southeast direction. The main portion lies in Essex County and the remainder, or northwest portion, lies in Hamilton County" (King, Dence and Webb, 1941: 402-403).

The area comprising the Huntington Forest is divided among the Newcomb, Long Lake and Santanoni quadrangles of the U.S.G.S. topographic maps. The major bodies of water lying wholly within the Forest are, in decreasing order of size, Catlin Lake, Rich Lake, Wolf Lake, Arbutus Lake, Deer Lake and Military Lake. The Huntington Forest is being skillfully managed to extract the largest possible amount of information on the wildlife of the central Adirondacks. Research facilities, both field and laboratory, are excellent. For further description of the area, the reader is referred to the following publications: History, policy and program, King, Dence and Webb, 1941; land vertebrates, Johnson, 1937; fishes, Dence, 1937; vascular plants, Heady, 1940. These papers include many maps and photographic illustrations.

Madawaska. A most interesting and readily accessible area about ten miles northwest of Paul Smiths, Franklin County. It is shown at the southern edge of the U.S.G.S. topographic map, Santa Clara quadrangle. I am indebted to Dr. Gordon M. Meade of Trudeau, N. Y., at present our leading authority on Adirondack birds, for an introduction to this area. It is one of the few places in New York where one may be almost certain to encounter the Spruce Grouse (*Canachites canadensis*).

Slide Mountain. The tallest peak in the Catskills (4204 feet), located in Ulster County about seven miles southeast of the village of Oliveria. For a description of Slide Mountain and adjacent area, and a rather incomplete list of the birds of the region, see Daley, 1922. Slide Mountain, with a height from base to summit of about two thousand feet, is almost a textbook illustration of the altitudinal zonation of plants and animals. The foot of the mountain is clothed with typical northern hardwood forest, with birch, beech and maple predominant and a few hemlocks interspersed. As one ascends the excellent state-maintained trail the hemlocks increase until they equal or exceed the hardwoods in number. Balsam fir then begins to appear among the hemlocks, and is the dominant conifer in most of the higher parts of the mountain. At the very summit the mountain is covered with spruce; this is the type locality of *Hylocichla minima bicknelli* (Ridgway), and the southernmost breeding limit of the species.

Rich Lake. The second largest lake within the Huntington Forest. On the shore of this lake the Forest research center is located. State Highway 28N, from Long Lake to Newcomb, passes just south of and parallel to the south shore of the lake.

Whiteface Mountain. One of the tallest Adirondack peaks (4872 feet), and readily accessible by means of a state-operated toll road from the village of Wilmington, Essex County. This road, a magnificent feat of engineering, permits the motorist to drive to within a few hundred feet of the summit, which is reached either by foot trail or by elevator. The higher portions of the mountain are densely covered with stunted spruce trees, the home of Bicknell's Thrush and the Blackpoll Warbler. From about 3000 to 4000 feet the trees are much taller; here live the Olive-backed Thrush, Arctic Three-toed Woodpecker, Brown-capped Chickadee and the two Kinglets.

Wolf Lake. A small lake within the Huntington Forest.

ANNOTATED LIST OF BIRDS

Anas rubripes Brewster. Black Duck

A female with a brood of young about a week old was seen at Adjidaumo on June 17, 1953. These birds were feeding along the shore in close association with the much older brood of Hooded Mergansers mentioned below.

Delacour and Mayr (1945: 21) stated rather abruptly that "it seems obvious that the Mexican and Black Ducks (*diazi* and *rubripes*) are only sub-specifically distinct from the Dusky Duck (*fulvigula*).” They united all of these under *fulvigula*, the oldest name. It is my belief that the case is by no means so "obvious." The Mexican Duck, *Anas diazi*, is so close to the Mallard, *A. platyrhynchos*, that a case might be made for considering it a rather restricted "hen-feathered" subspecies of Mallard, except that *diazi* and *platyrhynchos* are sympatric (Lindsey, 1946: 484). A comparatively recent origin of *diazi* from *platyrhynchos* is suggested by the high frequency of hybridization (Lindsey, 1946: 484).

The Dusky Duck, *A. fulvigula*, resembles the Black Duck more closely than does the Mexican Duck. However, *fulvigula* shows many points of resemblance to *platyrhynchos*; morphologically it is about midway between the (female) Mallard and the Black Duck. Among the points of similarity to the Mallard rather than to the Black Duck are the pattern of individual breast and tail feathers and the seasonal and sexual variations in color of bill. All in all, I prefer to consider the Mallard, Black Duck, Dusky Duck and Mexican Duck as specific entities.

Lophodytes cucullatus (Linnaeus). Hooded Merganser

A juvenal female was collected at the inlet of Rich Lake on July 4, 1950, and a juvenal male at Adjidaumo on June 17, 1953. In spite of the later date, the 1950 bird was somewhat younger, with feathers of the juvenal plumage on the underparts and scapular tracts only. It weighed 227 grams, and was quite fat. The iris was gray, the feet light gray with dark gray webs. The stomach contained dragonfly larvae, fragments of other insects, and sand. The 1953 specimen retained the down on the head, neck and lower back. Wing quills were just appearing. It was one of a brood of nine, and weighed 348.5 grams. In addition to dragonfly larvae, its stomach contained bones of a small frog (*Rana* sp.).

Mergus merganser americanus Cassin. American Merganser

This species was abundant in the Adirondack areas visited in 1950. Almost every small lake appeared to have one or more broods. Rich Lake had at least two. In 1953, on the other hand, not a single bird of this species was observed. A brood on Rich Lake was reported by the student workers at the Huntington Forest, but I was unable to find it. Two small downy young females were collected from a brood of five on Arbutus Lake on July 1, 1950. They weighed 64.7 and 59.3 grams, respectively. The larger bird had two Northern Redbelly Dace (*Chrosomus eos* Cope) in its crop. Its iris was light gray, darkening toward the center; bill black, with

grayish horn tip; legs gray with a yellowish cast, yellowest at sides of toes; webs black.

Buteo platypterus platypterus (Vieillot). Northern Broad-winged Hawk

This appears to be the commonest and most widely distributed hawk in the Adirondacks. Although not usually considered as a predator of game birds, an adult male collected June 15, 1953, had the mandibles of a young Ruffed Grouse in its stomach, together with a number of beetles and a Bog Lemming (*Synaptomys cooperi* Baird). This hawk, collected 1/2 mile south of the south end of Tupper Lake, weighed 372.2 grams and had testes measuring 11 by 6 millimeters.

Canachites canadensis canace (Linnaeus). Canada Spruce Grouse

Recent records of this species in New York are rather sparse. Although it probably occurs in other portions of the Adirondacks, the Spruce Grouse is now reported regularly only in the general vicinity of Paul Smiths, Franklin County. A male weighing 480 grams was collected at Madawaska on June 25, 1953. Of this weight, 8.7 grams represented the crop and its contents—spruce needles and shoots. The stomach contained more of the same, plus a small amount of gravel. This specimen is in heavy molt, the rectrices being shorter than a full-grown upper tail covert. Although this is much earlier than the period given in the literature for the postnuptial molt of the Spruce Grouse, it must be considered to represent that molt; this species is not known to have a prenuptial molt of any extent. The specimen in question is obviously a one-year-old bird, since it retains a number of old brown juvenal feathers, especially about the head. After examination of the considerable series of this species in the Carnegie Museum collection, I have come to the following conclusions:

1. The postjuvenal molt of *Canachites canadensis* is incomplete in that juvenal feathers (other than the two outermost primaries, which have long been used as an aging criterion) are frequently retained, especially about the head, until the first postnuptial molt.
2. Males of this species probably do not breed the first year; testes of the Madawaska specimen measured only 6 by 2 millimeters.
3. The postnuptial molt of yearling males is substantially earlier than that of older birds; late June and early July rather than August and September.
4. In addition to their having retained the two outermost primaries and often other feathers of the juvenal plumage, first-year males may be recognized by the greater amount of white streaking on the throat. This is tentatively suggested by Dwight (1900a: 144). The extent of white on the breast and abdomen does not seem to be correlated with age.

Bonasa umbellus togata (Linnaeus). Canada Ruffed Grouse

This species was common in 1950 and even more so in 1953. During the summer months highway mortality exacts a terrible toll of female and young grouse. The hens and their broods were frequently seen along the road in the early evening, showing little fear of automobiles, often to their undoing. If the parent bird is killed, the young birds (even if perfectly

able to fly) will remain in the immediate vicinity of her body, thus being all too easily killed by the next car to come along.

Specimens collected are as follows:

Bear Spring Mountain, June 18, 1950. Adult female, weight 500.8 grams. Accompanied by quail-sized young. Crop contained wild strawberries (*Fragaria* sp.); stomach the same, plus gravel.

Newcomb (three miles east), June 23, 1950. Two downy young, estimated age at capture one day. Taken alive; mother killed by truck. One died June 26, the other June 30.

Newcomb (entrance road to Huntington Forest), July 4, 1950. Adult female, weight 459 grams. Accompanied by small volant young. Crop contained two wild strawberries and many fruits of *Rubus pubescens* Raf. (locally known as "dewberry"); stomach many *Rubus* seeds plus quartz gravel. This bird was heavily infested with ticks of the species *Haemaphysalis leporis-palustris* (Packard), which has been recorded from Ruffed Grouse on a number of occasions.

Long Lake (three miles east), July 10, 1950. Adult female found dead on highway. Stomach contained seeds of *Rubus pubescens*, leaf fragments and gravel.

Newcomb (along route 28N, south of Rich Lake), June 17, 1953. Adult female, weight 546 grams. Accompanied by half-grown young. Stomach contained seeds, leaf fragments and gravel.

Newcomb (along route 28N, south of Rich Lake), June 19, 1953. Four downy young captured alive; mother killed by car. Age less than one week. Two males, weight 14.0 and 14.3 grams respectively; two females, weight 12.4 and 16.0 grams respectively. Crops contained inchworms (Geometridae) and black flies (Simuliidae).

Newcomb ($\frac{1}{4}$ mile west of Catlin Lake), June 28, 1953. Juvenal male, age about three weeks, weight 82.1 grams. Caught by the head in a snap-back mousetrap (as was another the day before which was too badly chewed by small mammals to preserve). Crop contained one bud of some herbaceous plant and one bug (Pentatomidae). Stomach contained seeds and gravel. This bird was still downy on the head.

Newcomb (Adjidaumo), July 2, 1953. Adult female, weight 467.6 grams. Accompanied by volant young. Crop and stomach contained fruits of *Rubus pubescens*, leaves and (stomach only) gravel.

Newcomb (on route 28N, south of Rich Lake), July 3, 1953. Juvenal female, found dead on highway. This bird was fully feathered and weighed 129.7 grams. Infested with ticks (*Haemaphysalis leporis-palustris*). Crop contained a small green caterpillar. Stomach contained gravel and fruits of *Rubus pubescens*.

Grouse were heard drumming in the vicinity of Slide Mountain on June 5 and 6, 1953. Also the bill and feet of a small grouse were found with a fresh fox dropping on the trail near the summit of Slide Mountain on June 5.

The taxonomy of the Ruffed Grouse of New York is complicated by the fact that intergradation among three subspecies is involved. The present treatment of this species is based on my study of the superb series of several

hundred specimens in the Cornell University collection, supplemented by those in the American Museum of Natural History and Carnegie Museum. The revisions by Todd (1940b), Aldrich and Friedmann (1943) and Snyder and Shortt (1946) were most helpful in this connection.

Typical *umbellus*, as exemplified by birds from eastern Pennsylvania, has a somewhat discontinuous distribution in New York. The grouse of the lower Hudson Valley are apparently pure *umbellus*. The subspecies reappears as the bird of central and northwestern New York. Intergradation with *togata* occurs over wide areas of the state, in which *umbellus*-like, *togata*-like and intermediate birds may be found. These areas include the Hudson Highlands, the Catskills, and a broad zone extending along the western border of the Adirondacks, the Mohawk Valley, and the eastern Finger Lakes. The Ruffed Grouse from Long Island was described by Bailey (1941) as *Bonasa umbellus helmei*. This population was considered by Aldrich and Friedmann (1943: 92) to represent intermediates between *umbellus* and *togata*. While it is true that Long Island specimens do appear to be intermediate between these two subspecies in many characteristics, the extensive series of these birds in the American Museum of Natural History is remarkably uniform. In such a decidedly variable species as the Ruffed Grouse, such uniformity is unexpected in a population supposedly intermediate between two subspecies. Further study may well show that *helmei* is worthy of recognition.

It has long been known that the Ruffed Grouse of the Adirondacks were referable to the subspecies *togata* of eastern Canada (Eaton, 1910: 374). Specimens examined in connection with the present study have confirmed this identification. As mentioned above, there is a broad zone of intergradation between *umbellus* and *togata* in New York. The *togata* influence seems strongest in the Catskills and in the area between the Catskills and the Adirondacks. The specimen from Bear Spring Mountain listed above is a good match for Adirondack *togata*. Two other Catskill birds seen are intermediates (East Jewett and "Sullivan County"). Two out of three Mohawk Valley birds examined are *togata* (Amsterdam and Fort Plain); the other (Fort Plain) is an intermediate. In the Hudson Highlands the grouse are also intermediate, but tending more toward *umbellus*. The *togata* influence is seen in a number of specimens from the eastern part of the Finger Lakes region, but here the problem is complicated by a strong infusion of *monticola* characters.

Mr. Todd, the describer of the subspecies *monticola*, limits its distribution to the southern Appalachians. Aldrich and Friedmann (1943: 93), however, extend the range of this form into western Pennsylvania and southwesternmost New York. After thorough study of the type series of *monticola*, together with more recently collected material from West Virginia and the mountains of western Virginia, I have come to the conclusion that the treatment of Aldrich and Friedmann best reflects the geographic variation observed. True *umbellus* is the palest and most rufescent of the eastern subspecies. Typical *monticola*, like *togata*, is darker and more boldly marked than *umbellus*. However, *monticola* is a brown rather than a gray bird; the brown extreme of *togata* is grayer than the gray extreme of *monticola*.

In the latter subspecies the dorsum is a deeper, less rufescent brown than that of *umbellus*. The background color of the breast and upper abdomen of *monticola* tends to be heavily suffused with deep buff or brown, these areas being pale buff in *umbellus*. Certain specimens from western Pennsylvania approach *umbellus* quite closely, but as a series their affinities with *monticola* are unmistakable.

The subspecies *monticola* appears in New York in its purest form in the mountainous portion of Cattaraugus County. A specimen from Hinsdale in the collection of St. Bonaventure College (kindly loaned by Dr. Stephen W. Eaton) is typical *monticola*. This is not unexpected, as this region in New York is directly continuous, as far as grouse habitat is concerned, with the Pennsylvania range of *monticola*. Aldrich and Friedmann (1943: 92) considered specimens from the Ithaca region to be *umbellus*, "somewhat intermediate toward *monticola*". I found Ithaca and other Tompkins County specimens to represent a highly variable population, but the majority seem to be *umbellus* with a decided *monticola* influence as indicated by the deepened color of the underparts. A few specimens approach true *monticola* quite closely; a somewhat larger number are close to typical *umbellus*. Although not mentioned by Aldrich and Friedmann, certain specimens from this region are intermediate toward *togata*. Intermediates between *umbellus* and *monticola* have also been examined from Wellsville and Binghamton, and such intergradation probably takes place all along the southern tier of counties in New York.

Larus argentatus smithsonianus Coues. Herring Gull

This species breeds on the lakes of the Adirondack region, usually on small islands. Although I saw a number of adult Herring Gulls both summers, I did not observe breeding activity. There is a downy young specimen in the study collection at the Huntington Forest which was banded at Wolf Lake on June 9, 1941, and found dead a week later.

Surnia ulula caparoch (Müller). American Hawk Owl

While collecting at Slide Mountain I was fortunate enough to be the guest of three gentlemen who have purchased and are rebuilding the house described by Mrs. Daley (1922). These men, Charles Schroeder, Bill Whiten and Harry Ackert, while not trained naturalists, are keen observers of the wildlife of the area. Mr. Schroeder told me of an owl which he had kept as a pet early in 1953, and showed me several photographs of it. None of the photographs, unfortunately, was suitable for reproduction, but the subject was unmistakably a Hawk Owl. Mr. Schroeder discovered the bird sitting in an apple-tree in his orchard one morning in mid-January, 1953. Bent (1938: 380) and other authors have commented on the fearlessness of this species, and such was Mr. Schroeder's experience. He was able to capture the owl by hand and make a pet of it. It was not confined, but, of its own volition, stayed in the house or its environs. Fed on raw meat and on mice, it exhibited an unvarying feeding behavior with the latter which may be of interest. It always began by pulling off and eating the mouse's head and then the forelimbs, one at a time. The forequarters were eaten by picking off a piece at a time, but the hindquarters were always swallowed whole, with the tail disappearing last, in typical owl fashion.

The bird lived until mid-April, when it died of what appeared to be a respiratory condition, and was buried. I inspected the corpse to confirm the identification, but its condition after two months' burial precluded its salvage as a scientific specimen.

The Hawk Owl is a rare and infrequent winter visitor to New York, having been recorded upon scarcely more than a dozen occasions. This, to my knowledge, is the first record from the Catskill region. The locality may be cited as West Branch [of the Neversink River], Oliveria, Ulster County, New York.

Sphyrapicus varius varius (Linnaeus). Yellow-bellied Sapsucker

Probably the most common woodpecker in the Adirondack region, and also common in the Catskills. An unsexed bird in full juvenal plumage was collected at the Chubb River Swamp on July 1, 1953. It weighed 45.6 grams, while its male parent, also collected, weighed 43.4 grams. The young sapsucker had not yet commenced its post-juvenal molt. Its iris was dark brown; bill, dark slate gray, lighter along the edges; legs, blue gray; mouth lining, pale flesh.

Dendrocopos villosus villosus (Linnaeus). Eastern Hairy Woodpecker

Eaton (1914: 142) mentioned that some specimens, especially those taken in winter, of Hairy Woodpecker from northern New York approach in size the large northern subspecies *D. v. septentrionalis* (Nuttall) (for which Eaton used the name *leucomelas* Boddaert, considered by recent authors to be a synonym of *villosus*). As indicated by Oberholser (1911: 599) and Ridgway (1914: 203), the Hairy Woodpeckers east of the Rocky Mountains are characterized by a gradual cline in size, decreasing from north to south. Three subspecies are currently recognized: *septentrionalis* (Nuttall), *villosus* (Linnaeus), and *audubonii* (Swainson). The breeding Hairy Woodpeckers of the Adirondacks, while averaging somewhat larger than those from elsewhere in New York, may best be considered to represent the upper extreme of *villosus*. Within New York, this species exhibits a decided seasonal movement, many individuals emerging from the forests during the winter to feed in orchards and parks. There is a noticeable influx of northern birds, recognizable by larger size, during the fall and winter months. Most of these must be considered intermediate between *villosus* and *septentrionalis*, and undoubtedly derive from a geographically intermediate population somewhere in southern Canada. However, some of these winter visitors may be considered true *septentrionalis*. Using the subspecific criteria recommended by Rand (1948b: 176), I identified the following New York specimens in the Cornell collection as *septentrionalis*: Axton, Franklin County, February 22, 1901; Ithaca, Tompkins County, January 11, 1935; Danby, Tompkins County, January 8, 1949.

Dates of the intermediate specimens from New York in the Cornell collection range from October 30 to January 16.

Delacour has recently (1951) advocated the merging of the "Pied Woodpeckers" (*Dendrocopos*) with the Three-toed Woodpeckers (*Picoides*) under the latter generic name. I believe that generic "lumping" is being carried too far in this case. Delacour attempted to draw a parallel between these

woodpeckers and certain of the three- and four-toed shore birds, but among the latter the hallux is non-functional, while in *Dendrocopos* it is functional. Even in *D. pubescens*, in which the hallux is reduced to the minimum in the genus, it is functional and bears a strong claw. There is no sign of a rudimentary hallux in *Picoides*; thus the gap between the three- and four-toed woodpeckers is more abruptly set off than that between the two groups of shore birds. Delacour admitted (p. 50) that *Picoides* "represents an extreme adaptation to arboreal habits" and that, as far as is known, there is a decided difference in food habits between the two groups (*Picoides* gathers almost all of its food by pecking wood; *Dendrocopos* less than half in this manner). It seems to me that this adaptation has led to divergence that ought to be recognized at the generic level. A yellow crown-patch is common to the males of the two Three-toed Woodpeckers. In the large genus *Dendrocopos* (over thirty species) a red patch somewhere on the head is the rule. Delacour made much of the fact that two Indian species of *Dendrocopos* (*mahrattensis* and *auriceps*) have yellow on the crown. I have examined specimens of these two species, and they can hardly be considered an approach to *Picoides*. In *auriceps* the crown is brown and the nape red; in between is a narrow blending zone of yellow. In *mahrattensis* the crown is a pale buff with a sulphur-yellow tinge, very different from the bright lemon-yellow of *Picoides*. In all other respects these two Indian species bear little or no particular resemblance to *Picoides*, and add nothing to Delacour's arguments. I favor retention of the genus *Dendrocopos*.

Picoides arcticus (Swainson). Arctic Three-toed Woodpecker

Eaton (1914: 145) summarized the occurrence of this species as follows. "Throughout the year it is fairly common in all portions of the spruce and balsam belt of the Adirondacks, there ranking next to the Sapsucker and Hairy woodpecker in abundance and probably much more plentiful than the American three-toed woodpecker and the Downy woodpecker." This was certainly not my experience. The only individual of this species seen at close range was an adult female collected July 5, 1950, at about 3800 feet elevation on Whiteface Mountain. This bird weighed 68.3 grams and was growing new feathers in its incubation patch. One was seen at Madawaska on June 24, 1953, and the call note of this (or the following) species was heard at the Chubb River Swamp on July 1, 1953. In spite of Eaton's remarks, I found the Downy Woodpecker (*Dendrocopos pubescens*) to be much more common and widespread in the Adirondacks than the Arctic Three-toed Woodpecker.

Picoides tridactylus bacatus Bangs. American Three-toed Woodpecker

This species is sufficiently uncommon in the Adirondacks to make any definite breeding record worthy of mention. On July 8 and 9, 1950, I collected a juvenal male and its male parent at Big Shallow Pond. The young bird was out of the nest, but was being fed by its parents. The nest was in a dead and barkless tree, about forty feet tall. The top was broken off the tree and the birds apparently entered the nest cavity through this break; I saw no sign of an entrance hole. The nest tree was located along the ecological edge between a virgin spruce forest and a tamarack bog. The young bird weighed 37.1 grams; the adult was not weighed.

Empidonax flaviventris (Baird and Baird). Yellow-bellied Flycatcher

Eaton (1914: 193) quoted reports of this species being a "summer resident" or breeding at Tully Lake, Buffalo, Peterboro, and Granville, Washington County. All of these are old records, and are probably based on misidentification or on summering but non-breeding birds. While it is not impossible that the species may have bred occasionally in some of the cold bogs of the central part of New York, I have seen no such record since those reported by Eaton. At the present time it is known as a breeding bird only in the Adirondacks and higher Catskills. I would have expected it to be confined to the summit on Slide Mountain; however, on June 5, 1953, I found it present well below the limit of spruce and even fir, down to the predominantly hemlock forest. -I also saw or heard this species at Madawaska and the Chubb River Swamp. The description of its voice given by Peterson (1947: 149) is an excellent one. To my ear the note described by Peterson as "killic" bears a close resemblance to the well known "chebec" of the Least Flycatcher (*Empidonax minimus*), but is less harsh and forceful. I have not seen this comparison made elsewhere, but I found the resemblance striking.

Perisoreus canadensis canadensis (Linnaeus). Canada Jay

I encountered what was apparently a family party of this species at Madawaska on June 24, 1953; full-grown young in juvenal plumage were seen. I found the Canada Jays here to be much more shy and difficult to approach than they were (at the same time of year) in Montana. The only bird collected was an adult female in very heavy postnuptial molt; the old feathers are greatly worn and discolored. The rectrices were being replaced centrifugally; the outermost pair had not yet been shed, while the new central rectrices extend 67 and 53 millimeters, respectively, beyond their sheaths. The stomach of this bird contained remains of some large black hymenopterous insect.

The Canada Jay is closely confined to the Adirondacks within New York. Eaton (1914) knew of no records from beyond this region, and the files of the United States Fish and Wildlife Service contain only a record each from Utica and Little Falls, both barely outside the Adirondacks. It was with an understandable surprise, then, that I heard from my friends Charles Schroeder, Bill Whiten and Harry Ackert that they had seen "Canadian Jays" at West Branch, in the valley below Slide Mountain in the Catskills, during the winter of 1952-1953. I questioned them closely and found that they were perfectly familiar with the species, having seen it many times in the Adirondacks; they did not realize that its presence in the Catskills was unusual. It was their habit to place ham fat and suet where it would be available for the winter birds. Blue Jays (*Cyanocitta cristata*) were frequent and abundant visitors to this food supply, and I was informed that they were joined by some four to six Canada Jays. The latter birds appeared early in January, 1953, and disappeared during the first warm spell early in March. This is a most unusual record, but I am convinced of its authenticity; the birds were fully and accurately described to me. It is noteworthy that these ordinarily sedentary northern birds appeared during the same winter and at the same place as the Hawk Owl mentioned above.

Parus atricapillus atricapillus Linnaeus. Eastern Black-capped Chickadee

During the course of my study of the taxonomy of the birds of New York, I amassed a small but representative series of Chickadees taken during the breeding season. Unfortunately the color characteristics upon which principal reliance is placed in the study of geographic variation in this species are subject to much change through wear and discoloration. Breeding birds are very poor for color comparisons. Among the breeding Chickadees of New York, only one apparently consistent color difference was evident. Six specimens in juvenal plumage from the eastern Adirondacks (south shore of Rich Lake, 5; Elizabethtown, 1) are darker and sootier on the dorsum, with less buffy suffusion in the gray, than juvenals from elsewhere in New York (Ithaca, 1; Varna, 1; Stephentown, 3; White Plains, 1). Similar differences are not apparent in the two breeding adult Adirondack birds at hand (parents of the five Rich Lake juvenals), but these birds are quite worn. It is evident that more work must be done on the Chickadees of New York with series of birds in unworn plumage, preferably taken in the spring when the birds are on their territories but not yet subjected to the rigors of raising a family. It can then be determined whether a consistent difference can be detected between the Chickadees of the Adirondacks and those of the remainder of the state.

Although many individual Chickadees, perhaps the majority, are rather sedentary, there is definite evidence for some migration in this species, both from field observation and from banding. Two specimens taken at Inlet, Hamilton County, on November 23, 1940, may have entered the Adirondacks from north of our borders. These two birds exhibit a tendency toward the reduction in buff of the gray dorsum which is one of the characteristics ascribed by Duvall (1945: 56) to a supposed northern race, *P. a. anamesus* (Todd). This race has not yet been recognized by the A.O.U. Check-list Committee, and was refused recognition by Rand (1948a: 58) in a review of the species. The two moot specimens differ most from other New York birds in the length of their tails, 67 and 68 mm. A series of breeding males from all over New York had tails ranging from 59 to 64 mm. in length. Although the wing measurements of these two birds (65 and 67 mm.) fall within the range of *atricapillus* (or *anamesus*, which is said to be similar in size), their tail measurements are extreme and are well within the range of the long-tailed western race, *septentrionalis*. The latter race, however, is distinguishable by the increased amount of white edging to the wing and tail feathers, and, furthermore, does not extend east of Manitoba. It is difficult to conceive of Chickadees migrating as far as New York from a region such as Minnesota or western Ontario where intergrades toward *septentrionalis* might be expected. It is obvious that the geographic variation in the Chickadees of the northeast is not yet fully understood.

All specimens mentioned in the above discussion are in the collection of Cornell University.

Apropos of this species, I might add that I do not share the current majority opinion as to the limits of the species *Parus atricapillus*. Most modern publications consider the Willow Tits of the Old World (for which *montanus* Baldenstein, 1827, seems to be the oldest name) as conspecific

with *P. atricapillus* of North America. Duvall (1945: 51) rebelled at this treatment and listed the morphological characteristics separating the two groups. In addition, a reading of a description of the voice of the Willow Tit (Witherby *et al.*, 1940: 266) will soon convince an American that the species about which he is reading has nothing to do with the Black-capped Chickadee, which is certainly not known for its "series of sweet warbling notes of striking richness" which are compared to those of the Canary and Nightingale.

Parus hudsonicus littoralis Bryant. Acadian Chickadee

Godfrey (1951a) has recently completed a thorough study of the eastern forms of this species. He has confirmed the identity of the Brown-capped Chickadees of northern New York and New England with *littoralis* of Nova Scotia, with the provision that the former average slightly larger. A number of Adirondack specimens from the Cornell collection were examined by Godfrey in connection with his revision.

Tanner (1952), in a most interesting and instructive paper, showed that in the southern Appalachians a definite altitudinal zonation of the two Chickadees, *Parus carolinensis* and *P. atricapillus*, exists. In his summary (p. 424) he stated "These facts indicate: 1) that there is some form of competition between the two species, that operates during the early nesting season; and 2) that the presence of Black-capped Chickadees prevents the Carolinas from inhabiting the higher parts of these mountains." This segregation is not true of the two species of *Parus* found in the Adirondacks. I found *P. atricapillus* and *P. hudsonicus* to be sympatric at Madawaska and at the Chubb River Swamp, where I could hear the call-notes of both species simultaneously. A study of these two species in an area of sympatry might reveal much of interest with regard to competition or lack thereof, and mechanisms of isolation, especially when compared with Tanner's study of *P. atricapillus* and *P. carolinensis*.

Turdus migratorius migratorius Linnaeus. Eastern Robin

An adult female taken June 14, 1953, on the south shore of Rich Lake had as an ectoparasite a flea of the species *Ceratophyllus diffinus* Jordan. "This is a fairly common species, widely distributed in North America and occurring on a number of species of passerine birds." (Dr. G. P. Holland, in a letter.)

Hylocichla ustulata clarescens Burleigh and Peters. Northeastern Olive-backed Thrush

Study of a long series loaned by the United States National Museum together with the material in the Cornell collection convinced me that Godfrey (1951b) and other authors are correct in synonymizing *almae* Oberholser with *swainsoni* (Tschudi). The breeding form of northeastern United States, including New York, is closest to the more rufescent form *clarescens* which was originally thought to be confined to Newfoundland. This is one of the species in which the importance of studying only breeding birds in taxonomic work is clearly shown, since the more western *swainsoni*, a grayer form, occurs as a fairly common migrant in New York. Incidentally, the

color description in the original description of *clarescens* (Burleigh and Peters, 1948) is highly misleading.

On Whiteface Mountain in the Adirondacks the Olive-backed Thrush and Bicknell's Thrush overlap altitudinally during the breeding season. On Slide Mountain in the Catskills, on the other hand, there appeared to be a gap between their respective breeding areas. The Bicknell's Thrushes were confined to the spruce zone at the very summit, while the Olive-backed Thrushes ranged from the valley up to the zone where fir appeared among the hemlocks. The two species probably approach one another more closely than my observations seemed to indicate, but I seriously doubt whether actual overlap takes place on Slide Mountain.

In my experience, the Olive-backed Thrush is the commonest and most widespread of the members of the genus *Hylocichla* in the Adirondacks. It is the only member of the genus which appears to be sympatric with each of the other four species. It may be found side-by-side with Bicknell's Thrush on Whiteface and doubtless other high peaks of the Adirondacks, and I have heard it singing with the Wood Thrush (*H. mustelina*), Hermit Thrush (*H. guttata*) and Veery (*H. fuscescens*) within a few hundred yards of the Research Center building at the Huntington Forest in mixed woods at an elevation of about 1600 feet. On July 6, 1950, Robert C. Van Etten showed me a nest of the Olive-backed Thrush at the southeast corner of Wolf Lake. The nest was near the top of a fir sapling about six feet tall. The four young were frightened from the nest by our approach, but would undoubtedly have left the nest within a day. One of the young birds, a female, was collected.

I have long been of the belief recently expressed by Ripley (1952) that the "wood thrushes" of the genus *Hylocichla* might well be considered congeneric with the neotropical genus *Catharus*. However, the relationships of these birds are currently being investigated by William C. Dilger of Cornell University, and I continue to use the name *Hylocichla* pending the outcome of Mr. Dilger's studies.

Hylocichla minima bicknelli Ridgway. Bicknell's Thrush

Published information on this species in the Adirondacks is exceedingly scanty; so much so that in Wallace's summary (1939: 259) of the breeding distribution of *bicknelli* he stated "Probably the Adirondacks above 3000 feet." Wallace was able to examine personally only a single Adirondack specimen, a juvenal from Keene. I found Bicknell's Thrush to be common on the higher slopes of Whiteface Mountain, its preferred habitat being dense tangles of stunted spruce. Eaton (1914: 523) found it fairly common in the region of Mount Marcy in a similar habitat. On Slide Mountain in the Catskills, type locality of the subspecies, I found Bicknell's Thrush to be fairly common, but closely confined to the smaller spruce at the summit. On Whiteface Mountain, on the other hand, this species extends down into forests of densely packed, towering spruce and balsam fir, where it overlaps the habitat of the Olive-backed Thrush.

I collected three topotypes of Bicknell's Thrush on Slide Mountain on June 5 and 6, 1953. One of the most conspicuous features of the color of the freshly killed birds was the bright yellow of the basal half of the lower

mandible. I have been unable to find this color correctly described in the literature. In a survey of colored plates of North American birds I made while at Cornell (Parkes, 1947), I was able to find only one illustration of *Hylocichla minima* specifically intended to portray *H. m. bicknelli*; this was painted by the late Allan Brooks, and is on plate 92 of Forbush (1929). This plate, which portrays both subspecies, shows the mouth lining of *bicknelli* to be yellow, which is correct. In fresh specimens this yellow continued onto the outer surface of the basal half of the lower mandible; Brooks shows this area as a sort of dull lilac, paler than the equivalent area in the adjacent figure of *minima*. Forbush gave the color of the bill of *H. m. minima* as "dusky, basal half of under mandible yellowish." This is a reasonably good description of the bill of *bicknelli* as I saw it, although I would have said an unqualified "yellow" rather than "yellowish." Forbush did not mention any difference in color of bill between the two races. However, Ridgway (1907: 59) stated that the bill of the larger race, *minima*, was "flesh-colored or lilac in life" at the base of the lower mandible. This contradicts Forbush's description of *minima* but matches Brooks's plate of *bicknelli*. This confusion can be untangled only by careful taking of notes at the time of collection, since these colors are notoriously fugitive. Attention should be paid to this matter of bill color in all parts of the breeding range of *Hylocichla minima*; it is possible that some interesting patterns of geographic variation might thus be demonstrated.

Of the three specimens collected on Slide Mountain, two—a male collected June 5, 1953 and a female collected June 6—still have a few scattered juvenal feathers on the dorsum; such retention of portions of the juvenal body plumage is not mentioned by Dwight (1900b: 310). Neither of the males was at all fat, but the female still retained a substantial amount of fat. This might be interpreted as evidence that the males reach the breeding ground before the females.

Regulus satrapa satrapa Lichtenstein. Eastern Golden-crowned Kinglet

Hellmayr (1934: 510) and other authors have regarded the Golden-crowned Kinglet as conspecific with the Goldcrest (*Regulus regulus*) of the Old World. In 1945, van Rossem, who was in active disagreement with this concept, suggested to those authors who insisted upon merging *satrapa* with *something* (italics his) that they try *R. ignicapillus*, the Firecrest, also of the Old World. Meinertzhagen (1928: 503) did just that, and included the races of the Golden-crowned Kinglet in *ignicapillus* without explanatory comment. I have examined in the American Museum of Natural History all of the known subspecies of *satrapa*, *regulus* and *ignicapillus*. These three groups are certainly closely related. The American forms are roughly intermediate between the two Old World species, although to my eye somewhat closer to *ignicapillus*. The latter species and *regulus* are sympatric in part of their range. It seems best to continue to let the three forms rank as species.

The Golden-crowned Kinglet is a common and widespread breeding species of the evergreen forests of the Adirondacks. A male in full juvenal plumage collected $\frac{3}{4}$ mile south of the south end of Tupper Lake on June 17, 1953, had a dark brownish-gray iris; bill pinkish-horn with blackish-

horn tip; mouth lining bright reddish orange; tarsi horn; toes yellowish horn above, yellow below. An unsexed juvenal from the same brood weighed 6.3 grams, while an adult male collected at Madawaska on June 25 weighed 5.5 grams.

Regulus calendula calendula (Linnaeus). Eastern Ruby-crowned Kinglet

In the literature, there is no definite nesting record of this species in New York. Eaton (1914: 511) cited a record of "what was supposed to be a nest of this species containing young." Examination of the original reference (Ingersoll, 1876: 77; page erroneously cited by Eaton as 116) adds to, rather than reduces, the vagueness of this record. Ingersoll stated "It is supposed to breed in Northern New Jersey, in Western New York . . ." etc. Also, "In Western New York a nest which contained young was reported to have been built in the fork of a tree." Neither Kinglet breeds at the present time in western New York, nor is it probable that the Ruby-crowned nested there in the Nineteenth Century. Perhaps the accounts of the two kinglets were at least partially confused in Ingersoll's article, since he credited the Ruby-crowned with "probably sending a spur southward along the Alleghany Mountains," while of the Golden-crowned he wrote "Its range is nearly as extensive, but more northerly. . . . Nothing is known with certainty of its breeding anywhere in the United States, although it may be found to do so in the northern mountainous portions." Actually the reverse would be closer to the correct status of the two species.

There is a single unpublished definite nesting record of this species in New York, which I include here through the generosity of Dr. Arthur A. Allen. Dr. Allen photographed in color a nest with young found by his son David near Bay Pond, about ten miles west of Paul Smiths and five miles south of Madawaska, in June, 1942. In addition to this definite record, there are several midsummer reports of birds which were almost certainly breeding. Eaton (1914: 511) saw what he believed to be a Ruby-crowned Kinglet carrying food as if to young birds on July 19, 1905, on Mount Marcy. Kittredge (1925) reported one in full song at about 3900 feet on Whiteface Mountain on June 16, 1922. Meade (1950: 24) found three singing birds on July 6, 1950, at Madawaska, and has since told me of finding the species at Madawaska on other occasions in the breeding season. I collected a singing male with enlarged testes and worn plumage at about 3800 feet on Whiteface Mountain on July 5, 1950. A Ruby-crowned Kinglet in full song was seen and heard at the Chubb River Swamp on July 1, 1953, but I was unable to collect it. In summary, it seems evident that the Ruby-crowned Kinglet is a local and uncommon breeding species at several localities in the Adirondacks, even though only one nest has actually been found, to date.

Vermivora peregrina (Wilson). Tennessee Warbler

This is a rare and local breeding species in the Adirondacks. The only definite record I have found in the literature is that of Saunders (1929: 396), who found an adult feeding young near North Elba, and located several singing males during the breeding season in that region. Carleton (1951: 87) saw a singing male July 10, 1930, on Mt. Hurricane, Essex County.

The possibility of occasional breeding of this species in the Canadian Zone of the Catskills is suggested by the observations of Mrs. Daley (1922: 184) at the foot of Slide Mountain. She reported a Tennessee Warbler in full song on June 15, 1919, and stated that this bird was seen "several times through the following weeks". I heard a single Tennessee Warbler singing just below the summit of Slide Mountain on June 5, 1953. This may possibly have been a late migrant. In any case, the inclusion of Slide Mountain as part of the known breeding range of this species (Bent, 1953: 87) is not yet justified.

Parula americana (Linnaeus). Parula Warbler

This species is a well known and common breeding bird of New York, and I have nothing to contribute to our knowledge of its life history or distribution. I include it in order to present the following taxonomic discussion.

The subspecific division of the Parula Warbler is of long standing. The northern race was first separated by Brewster (1896) as *Compsothlypis americana usneae*. Brewster later concluded that Wilson's name *pusilla* was available (although he had rejected it in 1896 on grounds of preoccupation), and went on record (1918) as favoring the combination *C. a. pusilla* for the northern bird. In his original description of "*usneae*" Brewster admitted the instability of some of the characters assigned to the two supposed subspecies.

Ridgway's actions with regard to this species are difficult to reconcile. Writing of certain New York, Pennsylvania and Massachusetts specimens which he had identified as the southern *americana*, he stated (1902: 482, footnote) "A considerable number of specimens from these northern localities I am quite unable to distinguish from southern examples; in fact, if taken in Georgia or South Carolina, they would be considered very typical, some of them extreme, examples of this subspecies, as restricted." This would certainly appear suggestive of the inadvisability of naming geographic subdivisions of this species. Yet a few pages later, Ridgway named a *third* subspecies, *C. a. ramalinae*, from the Mississippi Valley. This was stated to be similar in coloration to *C. a. usneae* (= *P. a. pusilla*), but smaller even than *americana*. Examination of Ridgway's measurements merely confirms the inadvisability of any subspecific splitting at all. Since "*ramalinae*" is said to be similar in color to *pusilla*, the supposed northern type of coloration is thus recorded south to Louisiana and Texas. As to the supposed smaller size, Ridgway's measurements for *americana* and "*ramalinae*" indicate almost identical extremes, with the means of "*ramalinae*" differing from those of *americana* to the following extent: wing, 1 mm. less; tail, 1.6 mm. less; exposed culmen, 0.7 mm. less; tarsus, 0.2 mm. less. The only modern authors who have seen fit to accord recognition to "*ramalinae*" have been Oberholser (1938: 527) and Burleigh (1944: 442).

A large total number of specimens has been examined in connection with the present study, representing the combined series of the American Museum of Natural History, United States National Museum, Cornell University, and Carnegie Museum. It was found that the only characteristic which could be considered at all justified for basing a subspecific division was size.

As indicated by the accompanying table, overlap is extensive. While these two populations might be considered subspecifically separable by some of the more liberal standards which have been applied in such cases, variation and overlap are such that I prefer to follow a more rigid statistical convention such as that proposed by Amadon (1949) and decline to grant nomenclatorial recognition to these populations of *Parula americana*. As to color, identification of specimens without consulting the locality on the label would be virtually hopeless. Ridgway (1902: 484) attributed to the northern race deeper blue upper parts and more intensely black lores. This was definitely not true of the birds examined; in fact, a topotypical series of *americana* from South Carolina was deeper in color than many of the northern birds seen. Although males from the southeastern part of the range of the species seldom exhibit the extreme dark pectoral band of the northern and Mississippi Valley birds, many northern birds also lack this coloration and are indistinguishable from examples of true "*americana*". Certain trends in color and size are admittedly visible within the species *Parula americana*, but identification of individual specimens is so impractical that it is apparent that differentiation in this species has not reached the point at which trinomial nomenclature is justified.

Chord of wing of adult male *Parula americana*

Length in millimeters

| | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 |
|-----------------------|----|----|----|----|----|----|----|----|----|
| " <i>americana</i> " | | | | | | | | | |
| (number of specimens) | 1 | 7 | 12 | 14 | 9 | 2 | 2 | | |
| " <i>pusilla</i> " | | | | | | | | | |
| (number of specimens) | | 1 | 1 | 2 | 5 | 8 | 7 | 7 | 1 |

Dendroica coronata coronata (Linnaeus). Eastern Myrtle Warbler

Bent (1953: 254), in listing the southern breeding limits of this species, mentioned "northern New York (Falls Pond and Buffalo)". As indicated by Eaton (1914: 406), "Its breeding at Utica and Buffalo which has been reported has never been confirmed by later observation." In view of the uncertainty of so many of these early reports, it seems best to reject them in the light of our present knowledge of the breeding distribution of the species involved. As far as the Adirondacks are concerned, Eaton's remark that the Myrtle Warbler is "apparently confined to the spruce belt" is not true at the present time. I found the species common in other conifers as well. I collected a full-grown juvenal in a hemlock woods at the southeast corner of Rich Lake on June 27, 1950, and observed several mated pairs during 1953 in a white pine plantation on the south shore of Rich Lake. In general, the Myrtle Warbler is one of the commonest breeding warblers of the Adirondacks and higher Catskills. I found it so common on Slide Mountain that it is difficult for me to understand the experience of Mrs. Daley (1922), whose only record for the region was one in September in Frost Valley.

Dendroica striata (Forster). Blackpoll Warbler

Bent (1953: 405), giving the range of this species, stated that it breeds south to northern New York "(Mount Marcy and Leyden, rarely Slide Moun-

tain in the Catskills)". On June 5 and 6, 1953, this species was without question the most abundant warbler at the summit of Slide Mountain, and was heard singing down the slopes to the limit of predominantly hemlock forest. On June 5 a female was taken with her completed nest. No eggs had been laid as yet. The nest was about fifteen feet up in a spruce about three inches in diameter, thus being placed somewhat higher than any of the nests described by Bent (1953: 393-394).

The Blackpoll Warbler was also found to be abundant on Whiteface Mountain, but was rarely found at lower elevations in the Adirondacks. Like Bicknell's Thrush it appears to prefer the stunted spruce forests of the higher mountains.

Burleigh and Peters (1948: 119) have attempted to divide the Blackpoll Warbler into an eastern and a western subspecies, naming the latter *D. s. lurida*. Examination of breeding specimens in the American Museum of Natural History and Carnegie Museum indicated that the American Ornithologists' Union Committee on Classification and Nomenclature is amply justified in its refusal to grant recognition to this supposed western subspecies. None of the color differences claimed by Burleigh and Peters could be found in comparing breeding birds from the putative ranges of the two forms; in at least one case, the width of the dorsal streaks, the trend in females was actually the reverse of that claimed by the authors, namely, averaging broader rather than narrower in the western birds. The proposed subspecies *lurida* I consider untenable and I use the binomial for the Blackpoll Warbler.

Geothlypis trichas trichas (Linnaeus). Maryland Yellowthroat

This species was given particular attention while I was collecting for my taxonomic survey of New York birds. The results are based on study of a fine series of breeding birds from the following counties of the state: Cayuga, Delaware, Essex, Oneida, Ontario, Oswego, Rensselaer, St. Lawrence, Tompkins and Westchester. Migrants were available from several of these counties as well as from Saratoga and Yates counties. Comparative material from other states was ample. The most interesting finding has been that there seems to be no reason for the continued separation of *brachidactyla* and *trichas* under modern subspecific criteria, much less for the subdivision of *brachidactyla* into six named races as proposed by Oberholser (1948). Individual variation within a given geographic area is fully as great as observed geographic trends in variation. Measurements presented by Ridgway (1902: 662, 664) obviously show too much overlap to permit use of size as a criterion of separation. As an example, Ridgway's measurements (in millimeters) of the wings of adult males are as follows: *trichas*, 49 to 56.5 (52.9); *brachidactyla*, 51.5 to 59 (55.1). Of 23 New York breeding males measured, only four, or 17.4%, could be identified as *brachidactyla* by the criterion of having a wing longer than 56.5 mm.! Since I found at least one New York bird which slightly exceeded Ridgway's maximum for *brachidactyla*, it is probable that specimens could be found from within the restricted breeding range of *trichas* which would exceed 56.5 mm. in wing length, thus increasing the percentage of unidentifiable specimens.

Color, too, is unreliable. The range of variation in color of specimens taken in New York encompasses the extremes attributed to *brachidactyla* and *trichas*. To offset the possible suggestion that this variation can be explained by the range of *trichas* (*sensu strictu*) actually extending to southern New York, it may be stated that two specimens from southeastern Westchester County which I collected on June 30, 1949, are among the *yellowest* New York birds examined, while specimens with the ventral yellow more restricted, supposedly typical of *trichas*, are scattered throughout the series. The two males with the ventral yellow most restricted were taken on the west shore of Canandaigua Lake (in the western Finger Lakes section) and at 2000 feet elevation on Goodnow Mountain in the Adirondacks. Females with the least yellow were taken at Howland's Island (northern Cayuga County) and at Brasher Falls, near the northernmost border of New York in St. Lawrence County.

Another indication of the great individual color variation in this species is the breadth of the postfrontal white stripe in adult males. Behle (1950: 198) found that this character, sometimes used in subspecific diagnoses, was of little or no taxonomic significance in the western races of *Geothlypis trichas* because of the high rate of individual variation. That this is also true of eastern birds is shown by a series of eight breeding males from the Ithaca region in which the breadth of this stripe varies from two to seven millimeters.

In view of the above findings, and pending a thorough revision of the Yellowthroats of eastern North America comparable to Behle's 1950 paper on the western races, New York birds are here considered to be *Geothlypis trichas trichas*, with *brachidactyla* as a synonym. It might be noted at this point that Todd (1940a: 551) could detect no differences between the Yellowthroats of northern and southern Pennsylvania, although these were supposedly *brachidactyla* and *trichas* respectively.

Euphagus carolinus carolinus (Müller). Western Rusty Blackbird

The trinomial is employed here because of the recently described *E. c. nigrans* Burleigh and Peters (1948), which I somewhat reluctantly recognize. These authors assign Newfoundland and the Magdalen Islands as the breeding area for their new race. The Magdalen Islands birds which they examined are in Carnegie Museum. Included are three adult males and two adult females. Their plumage is in such worn condition that color comparisons are almost valueless; however, I can detect no difference between this series and comparable birds from Quebec and Ontario. However, adult males in fresh fall plumage appear to have the brown feather-edgings of the dorsum much darker in *nigrans* than in *carolinus*; specimens in at least this one plumage are identifiable, so the race may be considered recognizable. Study of the series of this species in the American Museum of Natural History confirmed the difficulty or impossibility of detecting the color differences ascribed to breeding adults. Material in this series indicates that the Rusty Blackbirds of Nova Scotia may be assigned to *nigrans*.

Johnson (1937: 596) indicated the possibility of the Rusty Blackbird being a breeding species in the Huntington Forest. No recent observations, either my own or those of the students and staff of the Forest, have confirmed

Johnson's speculations. His two August records are of no significance as evidence for local breeding, since this species is an early nester and an early migrant. Evidence of this early migration is shown by a flock of Rusty Blackbirds at Adjidaumo on July 7, 1950, from which I collected three adult females and two young birds just beginning their postjuvenile molt. These two young birds show certain differences in color from birds of similar age taken at Churchill, Manitoba; the paucity of material available in this plumage precludes the possibility of a thorough investigation at present.

Two of the adult females collected weighed 58.5 and 61 grams, respectively. The muscles of the lighter bird were heavily infested with a parasite identified by Dr. B. V. Travis as *Sarcocystis* sp. Erickson (1940), in his list of known avian hosts of *Sarcocystis*, listed only one member of the family Icteridae, the Shiny Cowbird (*Molothrus bonariensis*) from Uruguay.

The juvenile male weighed 60.9 grams and the juvenile female 61.5 grams. The young birds had gray irides and pale flesh mouth linings.

Passerina cyanea (Linnaeus). Indigo Bunting

Although this species was not known in the Adirondacks in Eaton's day, it has since invaded the region. It was completely unknown in the Huntington Forest and surrounding area prior to 1947, but is now an abundant breeding bird of that region wherever suitable habitat is present. According to Dr. Arthur A. Allen it is now common at Bay Pond, Franklin County, an area substantially more "Canadian" in its faunal affinities than is the Newcomb area.

Hesperiphona vespertina vespertina (Cooper). Eastern Evening Grosbeak

As shown by Baillie (1940), this species has been steadily extending its breeding range eastward for years. This phenomenon is undoubtedly correlated with the astonishing winter abundance of this species in the eastern United States in recent seasons. The first published report of Evening Grosbeaks in the Adirondacks in summer was that of Fleischer (1943), who saw three adults between July 9 and July 20, 1942, in the vicinity of Elk Lake (northwest of Blue Ridge), Essex County. Barick (1946) reported a number of individuals at Cranberry Lake in the early summer of 1945, and suspected from their behavior that one pair was nesting. Young Evening Grosbeaks have been brought by their parents to feeding stations in the village of Saranac Lake annually since 1947 (Schaub, 1951). Not until 1953, however, were nests of this species actually found in the Adirondacks. It may now be placed on the list of breeding birds of New York without qualification. I am indebted to Greenleaf Chase, District Game Manager for the New York State Conservation Department, for permission to incorporate his data in this paper. Mr. Chase writes as follows (letter of August 13, 1953):

"Two nests found, both of which were completed by the 20th of May and possibly a clutch of eggs was then started. Nests were in the tops of mature hard maples in a beech-birch-maple stand, northwest exposure approximately 1800 feet contour on Shinglebay Mt., Town of Harrietstown, Franklin County. An estimated six pair were nesting on this contour in about a half mile belt. Distinct territories were picked out but due to foliage conditions the other nests were not located. A third nest was found in my yard [Ray Brook, just east of Saranac

Lake], westerly exposure, 1600 ft. elevation on a lateral branch of mature red spruce about 8 feet from the top of the tree. This nest was apparently broken up by crows after the clutch was started. I observed construction of this nest on May 22, 24 and the morning of the 26th — believed to be completed that date. Only materials observed were hemlock twigs taken with great selection by the female from nearby trees. She never appeared to go to the ground for any material. Nest building activities were between 5:00 and 7:00 A.M. and 6:30 and 8:00 P.M. [E.D.S.T.]. The first young grosbeak appeared in the yard near the feeding station on June 23rd. The peak of young bird activity still being fed by old birds was between June 23 and the 6th of July. A very few young birds were being fed by adults as late as the first of August, but as of this date there are no old birds at the feeding station during the day but approximately 15 to 20 young birds on their own are there at one time.

A great number of Evening Grosbeaks breeding in this area is apparent to me not only in the quantity of birds at the station but throughout the surrounding region. Breeding populations are reported at several points throughout the Adirondacks this year where no observations were made previously and yet there are no nests to my knowledge reported other than the ones I have mentioned.

The other points of possible breeding activity are Piseco and Indian Lake."

I can add additional probable breeding localities from my own field work in the summer of 1953. Evening Grosbeaks were regularly seen at a number of points along route 28N from the west end of Rich Lake into the village of Newcomb itself. Dr. Webb informs me that as many as eight or ten in a flock were seen early in June, feeding on the sand piles which the state maintains along the highway. I never saw more than two pairs at one time. Evening Grosbeaks were also frequently seen by the Huntington Forest personnel and myself along the dirt road which follows the north shore of Rich Lake at its western end. All of these birds may probably be considered as part of one population; the exact number of pairs represented would be difficult to determine without marking the birds individually or otherwise determining the extent of their individual movements. Still another locality for this species is on route 10, just southeast of its junction with route 421; this place is on the line between St. Lawrence County and Franklin County, about a mile south of the south end of Tupper Lake. I saw a single adult female here on June 17, 1953; like the Newcomb birds it was feeding on a sand pile.

Breeding in the Newcomb area apparently took place somewhat later than that reported by Mr. Chase. Both sexes regularly visited the sand piles together until mid-June, after which time the females were seldom seen, suggesting that they might be incubating. A female collected at the old camp of the federal Civilian Conservation Corps on the south shore of Rich Lake on June 16 weighed 56 grams. She appeared to have completed what Bailey (1952: 125) called "stage I" of the incubation patch cycle. Defeatherization had taken place, but little vascularization and no edema was apparent in the incubation patch. Her oviduct was not enlarged, and the largest ovule was 2.5 mm. in diameter. Stomach contents included small seeds and sand from the sand pile.

Loxia curvirostra minor (Brehm). Eastern Red Crossbill

I agree with Peters (1943: 98-99), who felt that "Griscom's renaming of the Red Crossbill of eastern North America was uncalled for . . . it seems

to me that the very slight mensural differences make it rash to attempt any switch of names on the basis of an unseen and unmeasured type." To Peters's remarks I may add that Griscom himself (1937: 94), in characterizing the small race *sitkensis* (= *minor* of Griscom's usage), stated that "The bill is also more parrotlike in that the tip of the upper mandible is shorter, not so produced beyond the tip of the lower, because more abruptly decurved, and projecting less horizontally." The photographic illustration from which Griscom deduced the supposed need for a switch in names (van Rossem, 1934) shows that the type of *minor* has the more produced shape of bill of eastern North American birds rather than the stumpy bill of *sitkensis*.

Red Crossbills were seen and heard on Whiteface Mountain on June 11, 1953, and at the Chubb River Swamp on July 1, 1953. Although no specimens were collected, I have examined Adirondack specimens taken by other collectors and thus justify use of the trinomial. I also observed this species at the summit of Slide Mountain on June 5 and 6, 1953. In all cases the birds were in small flocks and were very shy.

Junco hyemalis hyemalis (Linnaeus). Northern Slate-colored Junco

Special attention was given to the Junco during all collecting trips made in connection with my study of the taxonomy of New York birds. Breeding specimens were collected in western New York—whence none was available to Miller during the preparation of his monograph (Miller, 1951: 322)—the Catskills, the Adirondacks, and the highlands of Rensselaer County (one bird). Material of *carolinensis* was collected in the mountains of West Virginia. It was soon found that *all* of the breeding Juncos of New York are variously intermediate between *hyemalis* and *carolinensis*. Miller (1941: 325-326) emphasized the fact that the delimitation of these two races "must be arbitrary if it is to be attempted. Intergradations in all characters neither begin nor end at a single point. . . . The cataloguer desires definiteness and simplicity. Unfortunately these qualities do not exist." He assigned the breeding Juncos of southern New York (the Catskills) to *hyemalis*, but reluctantly, stating that "their inclusion in *hyemalis* seriously distorts the conception of that race. The Pennsylvania birds are intermediate, and little more can be said. I can not see that they fall closer to one race than to the other by a sufficient margin, all characters considered, to warrant a rational decision." The populations of western New York are continuous with those of Pennsylvania, and are equally difficult to place. Certain specimens are indistinguishable from West Virginia *carolinensis*, and at least one specimen which I collected in Allegany State Park, New York, on June 26, 1948, is of *maximum* size even for *carolinensis*. The Catskill population, in my belief, is better dismissed as intermediate than forced into a cubbyhole marked "*hyemalis*". Catskill birds, when freshly collected, resembled *carolinensis* in having bluish-white rather than pinkish-white bills. This difference may even be perceived in dried skins, the majority of specimens of true *hyemalis* showing a definite yellow color in the dried bill which is lacking in *carolinensis* and in most of the New York breeding birds.

Miller (1941: 321) combined for purposes of his study the Junco populations of New England and the Adirondacks, considering them as *hyemalis*. My specimens from the Adirondacks confirm what one would suspect on geographic grounds—the only significant discontinuity among New York breeding Juncos occurs between the Adirondack series and those of the rest of the state. Although the Adirondack series is fairly variable, it is closer, as a whole, to *hyemalis* than is any other sample from the state. This is shown by a slight tendency to smaller size, although one of the largest birds measured was collected at Rich Lake outlet on June 30, 1950. This was also a heavy bird, weighing 20.1 grams; other Adirondack males weighed 18.1, 18.1, 18.3 and 18.9 grams. This large individual also had the bluest bill of the series, which, as a whole, tends toward pinkish bills. The Adirondack birds also show more of a tendency for black to appear on the fifth rectrix, a feather which is pure white in the majority of *carolinensis* (and *carolinensis*-like birds from New York).

In summary, then, it can be said that the only breeding Juncos of New York which may be called *Junco hyemalis hyemalis* without unduly distorting the limits of that race are those of the Adirondacks, and even here there is some variation in the direction of *J. h. carolinensis*. The birds of the remainder of the state are variously intermediate between *hyemalis* and *carolinensis*, and can not be named as a population. When compared with typical examples of the two races, most of these Juncos resemble *carolinensis* more closely than *hyemalis*, especially with respect to color of bill and lack of contrast between colors of head and dorsum.

On June 6, 1953, I found a Junco's nest in a mossy bank bordering the Slide Mountain trail near the summit. The five young were no more than a day old.

Melospiza lincolnii lincolnii (Audubon). Eastern Lincoln's Sparrow

This species was found to be not uncommon along the edges of the open sphagnum bogs and swamps at Madawaska. A male and female collected on June 25, 1953, weighed 16.2 and 15.1 grams respectively. Dr. Gordon M. Meade introduced me to the song of this bird; my previous lack of familiarity with it undoubtedly caused me to overlook this shy species. To both Dr. Meade's ear and mine, the song of Lincoln's Sparrow bears a close resemblance to that of the Winter Wren (*Troglodytes troglodytes hiemalis*), an abundant Adirondack species. I have not seen this comparison made in print. Most comparisons which I have read seem far-fetched to me; thus we see the futility of subjective interpretations of bird song.

Linsdale (1928) and other ornithologists of the Pacific coast group (cf. Grinnell and Miller, 1944: 540) have strongly advocated the inclusion of *Melospiza* in *Passerella*. While these two groups are undoubtedly closely related, I prefer to recognize both genera for a number of reasons. In the matter of color pattern, Linsdale (1928: 349) stated that "there is no constant difference in coloration." All of the members of *Melospiza* are conspicuously streaked dorsally, although this streaking is somewhat obscured in the heavily pigmented Alaskan races of *M. melodia*. Of the Fox Sparrows, only the eastern *P. i. iliaca* is streaked dorsally, and the streaking is of a

sort quite different from that typical of *Melospiza*. Shape of bill is very different in the two groups as a whole; enough difference is discernible between even the most slender-billed Fox Sparrow (such as *schistacea*) and a stout-billed Song Sparrow (such as *atlantica*) to make convergence a reasonable explanation for this approach in shape of bill. Linsdale admitted that the difference in toe proportion employed by Ridgway (1901) was an absolute difference, although he minimized its significance (probably justifiably). Juvenals of *Passerella* are very similar to the adults in color and pattern; juvenals of *Melospiza* show a number of differences. Finally, Linsdale made much of the fact that "the extraordinarily great geographic variation exhibited by each of these groups is a characteristic which markedly separates them from any adjacent group of sparrows". I fear I must regard this as a poor argument. In the first place, it is only partly true. While both *Passerella iliaca* and *Melospiza melodia* are, indeed, highly plastic polytypic species, this is definitely not true of the Swamp Sparrow and Lincoln's Sparrow, which are clearly congeneric with the Song Sparrow. Of these two species of *Melospiza* each has three subspecies, which are indeed poorly marked compared with subspecific differences existing among Fox Sparrows and Song Sparrows. A similar scope of variation is found within the "adjacent group of sparrows" currently included in the genus *Zonotrichia*, ranging from the highly polytypic *capensis* to the monotypic *albicollis*. To carry the argument further, a large number of subspecies is comparatively rare among the Parulidae. Among the notable exceptions are *Dendroica petechia* and *Geothlypis trichas*, both of which are highly polytypic. This can hardly be considered as evidence that the Yellow Warbler is more closely related to the polytypic Yellowthroat than it is to the monotypic Chestnut-sided, Magnolia or Cerulean warblers.

Melospiza melodia melodia (Wilson). Eastern Song Sparrow

This is another of the species to which special attention has been devoted in the course of my New York collecting in recent years, for two chief reasons. It is one of the two species for which New York forms an area of intergradation among three subspecies (the other being the Ruffed Grouse, *Bonasa umbellus*; see discussion earlier in this paper), and it is a species of which the variation in eastern North America has never been worked out in a satisfactory manner. For many years all Song Sparrows east of the Rocky Mountains were unhesitatingly called *M. m. melodia*, and the attention of systematists was focused on the many western subspecies. No full-scale investigation of the eastern birds has as yet been published, although a number of ornithologists have looked into the matter. While at Cornell I assembled a series of nearly sixty breeding adult Song Sparrows from all over New York, the majority personally collected. Some comparative material from adjoining states and provinces was already available in the Cornell collection; more was accumulated in recent years by collecting and by exchange. As a result of careful study of this material, I have come to the conclusion that variation in eastern Song Sparrows is exceedingly complex, and is increased rather than simplified by the comparative lack of marked ecological barriers such as exist in the west. Here in the east there are broad areas of intergradation, characterized both by populations

in which the individuals themselves are largely intermediate, and by those in which individuals having the appearance of two subspecies are intermingled in one area.

The three subspecies of Song Sparrow in New York are *M. m. melodia* (Wilson), *M. m. euphonia* Wetmore, and *M. m. atlantica* Todd. Their respective distributions within the state are, roughly, eastern, western and coastal. *M. m. atlantica* does not fall within the scope of the present paper. The breeding series which I assembled shows that most of New York is a great zone of intergradation between *melodia* and *euphonia*. The breeding birds of the Adirondacks are a good match for the rufescent form of New England and the Maritime Provinces, generally held to represent true *melodia*. It is probable that this subspecies inhabits the St. Lawrence region east of the Thousand Islands, all of the Adirondacks, and the Hudson Valley east to the New England border and south to Putnam County. The Catskills, on the other hand, represent part of the zone of intergradation. A series of 13 specimens (Bear Spring Mountain, Neversink, Beaver Kill and Lew Beach), some kindly loaned by Richard B. Fischer, runs the gamut from "good" *melodia* to "good" *euphonia*. As a series it must be considered intermediate, although specimens from either end would not be out of place in a uniform, typical series of the subspecies in question.

SUMMARY

Collecting trips to the Adirondack and Catskill Mountains of New York were made from June 12 to July 10, 1950 and from June 5 to July 3, 1953. Thirty-one species of birds collected or observed during these trips are discussed in the present paper. These discussions comprise a variety of data on distribution, reproduction, molts and plumages, voice, food habits, soft-part colors, parasites and taxonomy. First definite nesting records for New York of the Ruby-crowned Kinglet (*Regulus calendula calendula*) and Evening Grosbeak (*Hesperiphona vespertina vespertina*) are included, as are the first Catskill records of the Hawk Owl (*Surnia ulula caparoch*) and Canada Jay (*Perisoreus canadensis canadensis*). The proposed mergers of *Dendrocopos* and *Picoides* and of *Melospiza* and *Passerella* are rejected. Subspecies found unworthy of nomenclatorial recognition include *Parula americana pusilla*, *Dendroica striata lurida*, and *Geothlypis trichas brachidactyla*.

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